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Schilling et al.

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(54) **SPREAD SPECTRUM ADAPTIVE POWER CONTROL COMMUNICATIONS SYSTEM AND METHOD**

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(63) Continuation of application No. 08/666,069, filed on Jun. 21, 1996, now abandoned, which is a continuation of application No. 08/218,198, filed on Mar. 28, 1994, now Pat. No. 5,535,238, which is a continuation-in-part of application No. 07/792,869, filed on Nov. 19, 1991, now Pat. No. 5,299,226, which is a continuation-in-part of application No. 07/614,816, filed on Nov. 16, 1990, now Pat. No. 5,093,840.

(57) **ABSTRACT**

A system and method for adaptive-power control of a spread-spectrum transmitter of a mobile station operating in a cellular-communications network using spread-spectrum modulation. A mobile station transmits a first spread-spectrum signal. A base station has an automatic-gain-control circuit for generating an AGC-output signal, from a received signal. The received signal includes the first spread-spectrum signal and an interfering signal. The base station also has a correlator for despreading the AGC-output signal, a power-measurement circuit responsive to processing the received signal with the despread AGC-output signal for generating a received-power level, a comparator coupled to the power-measurement circuit for generating a comparison signal by comparing the received-power level to a threshold level, a transmitter for transmitting a second spread-spectrum signal, and an antenna. The mobile station has a variable-gain device responsive to the comparison signal for adjusting a transmitter-power level of the first spread-spectrum signal.

(51) **Int. Cl.⁷** **H04L 27/30**

(52) **U.S. Cl.** **375/142; 375/139**

(58) **Field of Search** 375/200, 206, 375/248, 201, 347, 346, 316, 223, 202, 222, 225, 208, 219, 224, 309, 295; 370/209, 342, 252, 441, 310, 208, 203, 319, 316, 315, 335, 468, 320, 465, 479, 464, 241, 431, 347, 345; 380/34, 9, 33; 455/422, 522, 517, 507, 500, 39

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14 Claims, 11 Drawing Sheets

